

REMARKS

The examiner has objected to claims 5-6 and 8 as each being dependent on a rejected base claim. The examiner further states that these claims would be allowable if rewritten in independent form. Accordingly, Applicants have rewritten claims 5 and 6 to now be in independent form. claim 8 depends from newly amended claim 5, thereby obviating the objection to claim 8. Thus, it is respectfully urged that claims 5-6 and 8 are now in condition for allowance.

The examiner has rejected claims 1-4, 7, 9-21, 23, 25-26 under 35 U.S.C. 103 over JP 58204169 (Torikai, et al) in view of Chang et al. (U.S. patent 5,980,345). Applicants respectfully submit that this ground of rejection has been overcome by the instant amendment. Independent claims 1, 11, 25 and 26 have now been stated in "consisting essentially of" terms. The purpose of this limitation is to exclude hydroxyl amine from the scope of the claims.

Torikai, et al bath comprises a rhodium salt having the formula $[Rh(NH_3)_6]X_3$, wherein X is a halogen, NO_2 , etc., a hydrazine reducer, a *hydroxyl amine salt*, and optionally a platinum salt. Please notice that in all instances, the Torikai, et al composition *must* include a hydroxyl amine. It is recognized that Torikai, et al may also include "ammonia water", i.e. ammonium hydroxide, however, this is *in addition to and not instead of* a hydroxyl amine. Such hydroxy amine is not disclosed in the present application and the purpose of this claim limitation is to exclude hydroxyl amine from the scope of the claims. The inclusion of hydroxyl amine would detract from the basic and novel characteristics of the plating solution since it would tend to form unwanted complexes in the plating bath. The examiner has urged that there is no requirement by Applicants that the hydroxyl amine be excluded from the composition. Thus, Applicants have amended the present claims to now read "consisting essentially of" rather than "comprising". It is urged that this amendment adequately distinguishes the present claims from Torikai et al, which requires the presence of a hydroxyl amine salt.

As previously acknowledged, Torikai, et al does not teach a platinum nitrite or platinum ammine nitrite salt. The examiner has attempted to fill this deficiency by citing Chang et al. which discloses a platinum electroless plating bath, wherein the bath comprises a solution of platinum diamine dinitrite, hydrazine hydrate and ammonium hydroxide. However, it is urged that Chang et al. has nothing whatsoever to do with plating rhodium or a rhodium containing alloy.

The Examiner again asserts that it would be obvious to one of skill in the art to incorporate the platinum diamine dinitrite salt disclosed in Chang et al. in the Torikai, et al composition with the expectation of providing the desired electroless plating results. The examiner states that such a platinum salt is conventionally used in electroless plating solutions with hydrazine hydrate and ammonium hydroxide. It is submitted that such a conclusion is inappropriate in view of the applied art. The issue is not whether one skilled in the art *could* make such a substitution in light of Appellant's disclosure, but rather whether such a substitution is fairly *suggested* by the applied art. Citing references that merely indicate that isolated elements recited in the claims are known is not a sufficient basis for a conclusion of obviousness; there must be something that suggests the desirability of combining the references in a manner calculated to arrive at the claimed invention. Ex parte Hiyamizu, 10 U.S.P.Q.2d 1393, 1394 (PTO Bd. Pat. Ap. and Int., 1988). Such a suggestion is absent in the cited references. Further, even if one were to hypothetically use the Chang, et al platinum salt in the Torikai, et al composition, the result would *still* include a mandatory hydroxyl amine, which is clearly not a part of the presently claimed invention as amended.

While Chang et al. discloses the use of a platinum diamine dinitrite, there is no teaching or suggestion in the art to combine the platinum diamine dinitrite with a rhodium nitrite or ammine-nitrite salt to form an electroless plating bath for a platinum-rhodium alloy. More particularly, there is no teaching or suggestion to combine their a platinum diamine

dinitrite with a rhodium nitrite salt or rhodium amine-nitrite salt in solution with hydrazine hydrate and ammonium hydroxide to form a composition suitable to plate a platinum-rhodium alloy onto a substrate.

Not only is there nothing in the art to suggest a combination of these references to achieve the results of the claimed invention, but it is by no means conclusive that a combination of the teachings of these references would form a *compatible* solution having the stability of the presently claimed composition. One skilled in the art does not know, based on a reading of the Torikai, et al reference, if Torikai's composition would be compatible with a solution having a platinum salt disclosed by Chang et al.. Thus, it cannot be said that the claimed invention is obvious in view of such a hypothetical combination. Rather, the Examiner seems to be stating that it would be obvious for one skilled in the art to *try* and see if the platinum salt of Chang et al. would work with the solution of Rhoda et al. Requiring one skilled in the art to conduct experimentation to try and see if a particular platinum salt would be compatible with the solution of Torikai, et al., *including mandatory hydroxyl amine*, would place on that person an undue burden, which is indicative of non-obviousness. It is further submitted that in order to reach the present invention, not only would there need to be a suggestion to substitute the Chang platinum salt into the Torikai, et al composition, but there must also be a suggestion that one must thereafter eliminate the hydroxyl amine. There is not such suggestion and the examiner has not provided a reason for eliminating a hydroxyl amine from the hypothetical combination.

It is apparent that the Examiner is using an *obvious to try standard of patentability* to hypothesize that one skilled in the art would find it obvious to form an electroless plating composition of the present invention based on a reading of the applied art. The applied references do not teach or suggest combining a rhodium nitrite or amine-nitrite salt or with a platinum nitrite salt or platinum amine-nitrite salt to form a composition as in the present invention. Further, the examiner has only shown admittedly different salts and then concludes that the substitution would be obvious. A rejection on this basis is improper. It is therefore submitted that the rejection should be withdrawn.

The examiner has also rejected claim 22 under 35 U.S.C. 103 over JP 58204169 (Torikai, et al) in view of Chang et al. (U.S. patent 5,980,345) and further in view of Ishihara et al. (U.S. patent 5,032,694). Applicants respectfully urge that this ground of rejection should be withdrawn.

The arguments against Torikai et al. and Chang et al. are repeated from above and apply equally here. The examiner is of the position that Torikai and Chang teach each feature of the claimed invention, except for the semiconductor substrate. The examiner thus cites Ishihara et al. in an attempt to fill this void.

Indeed, Ishihara et al. teaches the use of a semiconductor substrate. In particular it relates to a conductive film circuit formed on an insulator substrate or semiconductor substrate whereby a metal or metal alloy, including a platinum-rhodium, alloy is deposited onto the substrate by coating or sputtering and then subsequently etched. Applicants strongly urge, however, that this reference is *not applicable* to the present invention since it *does not relate* to electroless plating of a substrate. It is urged that Ishihara teaches neither that semiconductor substrates are suitable for electroless plating techniques, nor electroless plating techniques as described by the present invention. The examiner states that it is well known in the art to use a semiconductor material in an electroless plating process. However, Applicants submit that the examiner is using a reverse analysis approach to justify his case. Again, the invention cannot be deemed unpatentable merely because, in a hindsight attempt to reconstruct the invention, one can find elements of it in the art; it must be shown that the invention as a whole was obvious at the time the invention was made without knowledge of the claimed invention. 35 U.S.C. 103. A reference has to offer sufficient motivation for one skilled in the art to achieve the desired result. Such is not taught by Ishihara, whose practices are quite different from the instant invention and from the other cited references.

Furthermore, with regard to the process claim 22, the invention is further removed from the combination of Torikai, et al and Chang, et al. In addition to the differences

discussed above, when a *rhodium alloy*, as opposed to rhodium alone, is to be plated, such must be done at high temperatures and pressures. The present invention has no such requirement. Please note on page 3, last two paragraphs of Torkai, et al, that their reaction requires use of an autoclave at a pressure of 10-30 Kg/cm² and temperatures in the range of 120 °C to 160 °C as opposed to the 20°C to about 98°C in the present claim 14. While Torikai's page 7 also reveals temperatures of 50-90 °C, this is only for rhodium alone, not alloys. For the foregoing reasons, it is urged that the 35 U.S.C.103 rejection should be withdrawn.

Claims 5-6 and 8 are objected to as each being dependent on a rejected base claim. Applicants submit that the rejections of the base claims have been overcome by the instant amendment, thereby obviating the objections to claims 5-6 and 8. It is therefore respectfully submitted that this objection should be withdrawn in view of the above amendment.

The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the examiner believes there is any matter which prevents allowance of the present application, it is requested that the undersigned be contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,

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I hereby certify that this paper is being facsimile transmitted to the United States Patent and Trademark Office (FAX No. 703- 872-9311) on July 31, 2003.

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